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Term	Documents
RADIALLY	933041
RADIALLIES	0
RADIALLYS	4
INWARD	456736
INWARDS	82238
(6 AND (RADIALLY ADJ INWARD)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	5
(L6 AND (RADIALLY INWARD)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	5

Database:

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Search History

DATE: Thursday, September 22, 2005 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ			
L12	L6 and (radially inward)	5	L12
L11	L9 and (radially adj inward)	10	L11
L10	L9 and (radially adj inword)	0	L10
L9	L8 and L1	737	L9
L8	(magnetic adj resonance)	85603	L8
L7	L6 and (radially with inword)	0	L7

L6	L5 and parallel	26	L6
L5	L4 and (magnetic adj resonance)	28	L5
L4	L3 and longitudinal	100	L4
L3	L2 and rods	333	L3
L2	L1 and rings	1176	L2
L1	((radio adj frequency) or (RF)) adj antenna	5732	L1

END OF SEARCH HISTORY

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Search Results - Record(s) 1 through 26 of 26 returned.

☐ 1. Document ID: US 6943551 B2 Relevance Rank: 81

Using default format because multiple data bases are involved.

L6: Entry 13 of 26 File: USPT Sep 13, 2005

US-PAT-NO: 6943551
DOCUMENT-IDENTIFIER: US 6943551 B2

TITLE: Magnetic resonance antenna

DATE-ISSUED: September 13, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Eberler; Ludwig	Postbauer-Heng			DE
Lazar; Razvan	Erlangen			DE
Nistler; Jurgen	Erlangen			DE
Zebelein; Gunther	Mohrendorf			DE

US-CL-CURRENT: 324/318; 324/322

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D

☐ 2. Document ID: US 20050127914 A1 Relevance Rank: 81

L6: Entry 4 of 26 File: PGPB Jun 16, 2005

PGPUB-DOCUMENT-NUMBER: 20050127914
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050127914 A1

TITLE: Magnetic resonance antenna

PUBLICATION-DATE: June 16, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Eberler, Ludwig	Postbauer-Heng		DE	
Lazar, Razvan	Erlangen		DE	
Nistler, Jurgen	Erlangen		DE	

Zebelein, Gunther Mohrendorf DE

APPL-NO: 10/ 810364 [PALM]
DATE FILED: March 26, 2004

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	103 14 215.0	2003DE-103 14 215.0	March 28, 2003

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/318; 324/313, 324/322
US-CL-CURRENT: 324/318; 324/313, 324/322

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

A magnetic resonance antenna has longitudinal antenna rods in a birdcage structure, and antenna ferrules connecting the longitudinal antenna rods at their ends in terms of radio-frequency. The magnetic resonance antenna has a number of radio-frequency switching elements that interrupt, in terms of radio-frequency, at least one part of the longitudinal antenna rod to detune the eigen-resonance frequency of the antenna with respect to an operating magnetic resonance frequency. For this purpose, the magnetic resonance antenna is provided with two switching lines, directed to the radio-frequency switching elements from outside of the birdcage structure, the switching lines having a ring line connected thereto running annularly on or in the birdcage structure and transverse to the longitudinal antenna rods.

☐ 3. Document ID: US 20040227515 A1 Relevance Rank: 79

L6: Entry 9 of 26 File: PGPB Nov 18, 2004

PGPUB-DOCUMENT-NUMBER: 20040227515
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040227515 A1

TITLE: Radio-frequency antenna for a magnetic resonance system

PUBLICATION-DATE: November 18, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Nistler, Jurgen	Erlangen		DE	

APPL-NO: 10/ 782263 [PALM]
DATE FILED: February 19, 2004

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	103 06 998.4	2003DE-103 06 998.4	February 19, 2003

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/318
US-CL-CURRENT: 324/318

REPRESENTATIVE-FIGURES: 6

ABSTRACT:

A radio-frequency antenna for a magnetic resonance system has a number of antenna rods and two rings. The antenna rods are regularly arranged around an antenna axis and are each connected at their rod ends with one of the rings per rod end. When the antenna rods proceed substantially parallel to the antenna axis, they exhibit, in a middle region of the antenna axis, a rod spacing from the antenna axis that is larger than the ring spacing from the antenna axis for at least one of the ferules. Either the antenna rods, with regard to their total length, are bent radially inwardly only in the area of the last 10%, or they proceed radially inwardly from their middle region over at least 20%, whereby in the outermost 10% no inward change ensues, or the rings, in their connection regions, are directed radially outwardly toward the antenna rods. Alternatively the antenna rods, together with the antenna axis, form an inclination angle, and exhibit, at their rod end situated farther from the antenna axis, a rod spacing from the antenna axis that is larger than a ring spacing from the antenna axis for the ring that is connected with the rod end situated farther from the antenna axis.

☐ 4. Document ID: US 20050162165 A1 Relevance Rank: 71

L6: Entry 2 of 26 File: PGPB Jul 28, 2005

PGPUB-DOCUMENT-NUMBER: 20050162165
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050162165 A1

TITLE: Magnetic resonance apparatus with a detunable RF resonator

PUBLICATION-DATE: July 28, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Nistler, Jurgen	Erlangen		DE	
Renz, Wolfgang	Erlangen		DE	

APPL-NO: 10/ 986606 [PALM]
DATE FILED: November 12, 2004

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	103 53 343.5	2003DE-103 53 343.5	November 14, 2003

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/318; 324/322
US-CL-CURRENT: 324/318; 324/322

REPRESENTATIVE-FIGURES: 3

ABSTRACT:

A magnetic resonance apparatus with a radio-frequency shield at a reference potential, a detuning circuit and an electrical line which is connected with the detuning circuit. The electrical line is fashioned as a strip conductor and is attached to the radio-frequency shield. The strip conductor can be used for direct icurrent/direct voltage supply of the detuning circuit. This has the advantage that the detuning circuit can be activated without exerting a significant interfering influence on the magnetic field in the magnetic resonance apparatus.

☐ 5. Document ID: US 20050206381 A1 Relevance Rank: 71

L6: Entry 1 of 26 File: PGPB Sep 22, 2005

PGPUB-DOCUMENT-NUMBER: 20050206381
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050206381 A1

TITLE: Time-varying magnetic fields generator for a magnetic resonance apparatus

PUBLICATION-DATE: September 22, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Nistler, Jurgen	Erlangen		DE	
Stocker, Stefan	Grossenseebach		DE	
Vester, Markus	Nurnberg		DE	

APPL-NO: 10/ 909517 [PALM]
DATE FILED: August 2, 2004

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	103 35 790.4	2003DE-103 35 790.4	August 5, 2003

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/318; 324/322
US-CL-CURRENT: 324/318; 324/322

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

A time-varying magnetic fields generator for a magnetic resonance apparatus has at least one gradient coil and one radio-frequency antenna, gradient coil being formed by two essentially hollow-cylindrical units that are axially separated from one another and that contain conductors of the gradient coil, and that each have at least one axial free space proceeding therethrough to accommodate a shim device, and at least one hollow conductor of the radio-frequency antenna is disposed between the units such that its hollow interior axially communicates with and continues at least one of the free spaces.

☐ 6. Document ID: US 20040150401 A1 Relevance Rank: 69

L6: Entry 10 of 26 File: PGPB Aug 5, 2004

PGPUB-DOCUMENT-NUMBER: 20040150401
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040150401 A1

TITLE: Method to correct the B1 field in MR measurements and MR apparatus for implementing the method

PUBLICATION-DATE: August 5, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Eberler, Ludwig	Postbauer-Heng		DE	
Vester, Markus	Nuernberg		DE	

APPL-NO: 10/ 720720 [PALM]
DATE FILED: November 24, 2003

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	10254660.6	2002DE-10254660.6	November 22, 2002

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/318; 324/322
US-CL-CURRENT: 324/318; 324/322

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

In a method and magnetic resonance examination apparatus wherein the field strength of radio-frequency pulses emitted by an antenna of the magnetic apparatus, the current flowing in the antenna upon the emission of the radio-frequency pulses is regulated by a predetermined nominal value by variation of a power fed into the antenna.

☐ 7. Document ID: US 6927573 B2 Relevance Rank: 69

L6: Entry 14 of 26 File: USPT Aug 9, 2005

US-PAT-NO: 6927573
DOCUMENT-IDENTIFIER: US 6927573 B2

TITLE: Method to correct the B1 field in MR measurements and MR apparatus for implementing the method

DATE-ISSUED: August 9, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Eberler; Ludwig	Postbauer-Heng			DE
Vester; Markus	Nuremberg			DE

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Siemens Aktiengesellschaft	Munich			DE	03

APPL-NO: 10/ 720720 [PALM]
DATE FILED: November 24, 2003

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
DE	102 54 660	November 22, 2002

INT-CL: [07] G01 V 3/00

US-CL-ISSUED: 324/309; 324/318
US-CL-CURRENT: 324/309; 324/318

FIELD-OF-SEARCH: 324/309, 324/307, 324/300, 324/318, 324/322, 600/410

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
2750555	June 1956	Kather et al.	323/227
3460042	August 1969	Harner	340/870.28
4689563	August 1987	Bottomley et al.	324/309
5138261	August 1992	Ratzel	324/318
5261405	November 1993	Fossel	600/410
6334069	December 2001	George et al.	607/2
6433546	August 2002	Kroeckel et al.	324/309

ART-UNIT: 2859

PRIMARY-EXAMINER: Shrivastav; Brij B.

ATTY-AGENT-FIRM: Schiff Hardin, LLP

ABSTRACT:

In a method and magnetic resonance examination apparatus wherein the field strength of radio-frequency pulses emitted by an antenna of the magnetic apparatus, the current flowing in the antenna upon the emission of the radio-frequency pulses is regulated by a predetermined nominal value by variation of a power fed into the antenna.

13 Claims, 4 Drawing figures

☐ 8. Document ID: US 5959453 A Relevance Rank: 60

L6: Entry 16 of 26 File: USPT Sep 28, 1999

US-PAT-NO: 5959453
DOCUMENT-IDENTIFIER: US 5959453 A

TITLE: Radial NMR well logging apparatus and method

DATE-ISSUED: September 28, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Taicher; Gersch Zvi	Houston	TX		
Reiderman; Arcady	Houston	TX		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Western Atlas International, Inc.	Houston	TX			02

APPL-NO: 08/ 959770 [PALM]
DATE FILED: October 29, 1997

INT-CL: [06] G01 V 3/00

US-CL-ISSUED: 324/303; 324/303, 324/309, 324/318, 324/322, 324/307, 600/410, 600/419, 600/422
US-CL-CURRENT: 324/303; 324/307, 324/309, 324/318, 324/322, 600/410, 600/419, 600/422

FIELD-OF-SEARCH: 324/303, 324/309, 324/318, 324/322, 324/307, 600/410, 600/419, 600/422

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
4717876	January 1988	Masi et al.	324/303
5055787	October 1991	Kleinberg et al.	324/300
5332967	July 1994	Shporer	324/303

ART-UNIT: 287

PRIMARY-EXAMINER: Barlow; John

ASSISTANT-EXAMINER: Shrivastav; Brij B.

ATTY-AGENT-FIRM: Fagin; Richard A.

ABSTRACT:

A nuclear magnetic resonance sensing apparatus, including a magnet for inducing a static magnetic field within materials to be analyzed. The magnetic field is substantially coaxial with a longitudinal axis of the apparatus. The magnetic field is polarized substantially perpendicularly to the longitudinal axis and is symmetric about the axis. The static magnetic field has a maximum longitudinal gradient which is inversely related to a speed of motion of the apparatus along the longitudinal axis through the materials to be analyzed. The apparatus includes a transmitter for generating a radio frequency magnetic field in the materials for exciting nuclei in the materials. The radio frequency magnetic field is substantially orthogonal to the static magnetic field. The apparatus includes a receiver for detecting nuclear magnetic resonance signals from the excited nuclei in the materials. In a preferred embodiment, the magnet comprise magnetized cylinders stacked along the longitudinal axis. The magnetization of each of cylinder is proportional to its distance from a center plane of the magnet. The cylinders are magnetized parallel to the longitudinal axis and towards the center plane. The preferred embodiment of the magnet includes an end magnet disposed at each longitudinal end of the stacked cylinders. The end magnets are each magnetized parallel to the longitudinal axis and in a direction opposite to the magnetization of an adjacent one of the cylinders.

14 Claims, 8 Drawing figures

☐ 9. Document ID: US 20050099183 A1 Relevance Rank: 60

L6: Entry 6 of 26 File: PGPB May 12, 2005

PGPUB-DOCUMENT-NUMBER: 20050099183
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050099183 A1

TITLE: Generator of time-variable magnetic fields of a magnetic resonance device and magnetic resonance device

PUBLICATION-DATE: May 12, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Heid, Oliver	Gunzenhausen		DE	
Nistler, Jurgen	Erlangen		DE	
Vester, Markus	Numberg		DE	

APPL-NO: 10/ 984636 [PALM]
DATE FILED: November 9, 2004

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	10352381.2	2003DE-10352381.2	November 10, 2003

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/322; 324/318
US-CL-CURRENT: 324/322; 324/318

REPRESENTATIVE-FIGURES: 2

ABSTRACT:

A generator of time-variable magnetic fields of a magnetic resonance device having an examination space for registering at least one area to be examined of an item being examined has the following features:

the conductors of a gradient coil arrangement of the generator define an area at least partially surrounding the examination space,

said area contains at least a partial area which is free from conductors of the gradient coil arrangement and which contains conductors of a radio frequency antenna of the generator, and

a field flowback space, inter alia for fields of the radio frequency antenna, extends proceeding from the partial area away from the examination space and is delimited beyond said partial area by a radio frequency shield.

☐ 10. Document ID: US 20050140369 A1 Relevance Rank: 58

L6: Entry 3 of 26 File: PGPB Jun 30, 2005

PGPUB-DOCUMENT-NUMBER: 20050140369
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050140369 A1

TITLE: RF transmitter arrangement for an MR system, and method for determining a setting parameter therefor

PUBLICATION-DATE: June 30, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Feiweier, Thorsten	Poxdorf		DE	
Oppelt, Ralph	Uttenreuth		DE	
Renz, Wolfgang	Erlangen		DE	
Vester, Markus	Nurnberg		DE	

APPL-NO: 10/ 993644 [PALM]
DATE FILED: November 19, 2004

RELATED-US-APPL-DATA:
Application is a non-provisional-of-provisional application 60/523100, filed November 19, 2003,

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	103 54 227.2	2003DE-103 54 227.2	November 20, 2003
DE	10 2004 053 777.1	2004DE-10 2004 053 777.1	November 8, 2004

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/318; 324/309, 324/322
US-CL-CURRENT: 324/318; 324/309, 324/322

REPRESENTATIVE-FIGURES: 3, 8,

ABSTRACT:

A radio frequency transmitter arrangement for a magnetic resonance apparatus has a distribution unit and an antenna unit, wherein the antenna unit, to generate radio frequency fields, is fashioned in at least two orthogonal modes, and the distribution unit is fashioned for the division of an RF transmission signal into at least two mode feed signals. At least one adjustment unit is provided to adjust the amplitude and/or phase of one of the mode feed signals and is connected with the antenna unit such that each of the mode feed signals generates a radio

frequency field in one of the modes. A multiple transmitter arrangement has at least two radio frequency transmitter arrangements and at least two 180.degree. hybrids. A method is provided to determine at least one setting parameter of the adjustment unit.

RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application No. 60/523,100 filed Nov. 19, 2003.

☐ 11. Document ID: DE 10306998 B3, US 20040227515 A1 Relevance Rank: 57

L6: Entry 25 of 26 File: DWPI Apr 21, 2005

DERWENT-ACC-NO: 2005-028852
DERWENT-WEEK: 200527

TITLE: RF antenna for magnetic resonance system, for medical use, has antenna rods, each bent radially inward towards antenna axis for causing each rod to have rod spacing, which is larger than ring spacing

INVENTOR: NISTLER, J

PATENT-ASSIGNEE: SIEMENS AG (SIEI), NISTLER J (NISTI)

PRIORITY-DATA: 2003DE-1006998 (February 19, 2003)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 10306998 B3	April 21, 2005		000	G01R033/34
US 20040227515 A1	November 18, 2004		015	G01V003/00

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
DE 10306998B3	February 19, 2003	2003DE-1006998	
US20040227515A1	February 19, 2004	2004US-0782263	

INT-CL (IPC): A61 B 5/055; G01 R 33/34; G01 V 3/00

ABSTRACTED-PUB-NO: US20040227515A
BASIC-ABSTRACT:

NOVELTY - The antenna has antenna rods (10), each with opposite ends, where the rods are regularly disposed around a longitudinal antenna axis. Each rod has a middle region between rings (11) and parallel to the axis. Each rod is bent radially inward towards the axis for causing each rod to have a rod spacing, which is larger than a ring spacing. The rod and ring spacings extend from the axis to the rod and ring, respectively.

USE - Used for a magnetic resonance imaging (MRI) system in medical imaging

ADVANTAGE - The antenna rods are bent radially inward towards the antenna axis for causing each rod to have rod spacing that is larger than the ring spacing, thus reducing the ring spacing for minimizing the outlay for detuning the antenna, and hence achieving a faster outward field drop-off in a simple manner.

DESCRIPTION OF DRAWING(S) - The drawing shows a connection between a ring and antenna rods in a RF antenna.

Antenna rods 10

Rings 11

ABSTRACTED-PUB-NO: US20040227515A
EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.6/14

DERWENT-CLASS: P31 S01 S03 S05 W02
EPI-CODES: S01-E02A8A; S01-G08B5; S03-C02X; S03-E07; S05-D02B1; W02-B01C1; W02-B05B; W02-B10;

☐ 12. Document ID: US 20050099179 A1 Relevance Rank: 50

L6: Entry 7 of 26 File: PGPB May 12, 2005

PGPUB-DOCUMENT-NUMBER: 20050099179
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050099179 A1

TITLE: Parallel imaging compatible birdcage resonator

PUBLICATION-DATE: May 12, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Monski, William J. JR.	Sewickley	PA	US	
Alradady, Fahad	Glenshaw	PA	US	
Misic, George J.	Allison Park	PA	US	

APPL-NO: 10/ 723428 [PALM]
DATE FILED: November 27, 2003

RELATED-US-APPL-DATA:
Application is a non-provisional-of-provisional application 60/429855, filed November 27, 2002,

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/318
US-CL-CURRENT: 324/318

REPRESENTATIVE-FIGURES: 2

ABSTRACT:

A birdcage coil for use with a magnetic resonance (MR) system comprises a first ring at one thereof, a second ring at the other end thereof, and a plurality of rods electrically interconnecting the first and second rings. The first ring is electrically conductive and has a first diameter. The second ring is electrically conductive and has a second diameter. The rods and first and second rings are configured to form about the birdcage coil a plurality of partially-overlapped primary resonant substructures. Each primary resonant substructure includes two of the rods and the corresponding sections of the first and second rings interconnecting them.

CROSS-REFERENCE TO RELATED APPLICATION(S)

[0001] This application for patent claims the benefit of U.S. Provisional Application Ser. No. 60/429,855 titled Parallel Imaging Compatible Birdcage Resonator, filed Nov. 27, 2002. This provisional application has been assigned to the assignee of the invention disclosed below, and its teachings are incorporated into this document by reference.

☐ 13. Document ID: US 20050030021 A1 Relevance Rank: 50

L6: Entry 8 of 26 File: PGPB Feb 10, 2005

PGPUB-DOCUMENT-NUMBER: 20050030021
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050030021 A1

TITLE: Systems and methods for NMR logging

PUBLICATION-DATE: February 10, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Prammer, Manfred G.	Downington	PA	US	
Knizhnik, Sergey	Exton	PA	US	
Menger, Stefan K.	Exton	PA	US	
Goodman, George D.	Phoenixville	PA	US	
Harris, Edward J. III	Sanatoga	PA	US	
Drack, Earle	Spring City	PA	US	

APPL-NO: 10/ 837084 [PALM]
DATE FILED: April 30, 2004

RELATED-US-APPL-DATA:
Application is a non-provisional-of-provisional application 60/467568, filed May 2, 2003,
Application is a non-provisional-of-provisional application 60/508778, filed October 4, 2003,

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/303
US-CL-CURRENT: 324/303

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

An NMR logging tool for conducting NMR measurements in a plurality of sensitive volumes ranging up to a meter from the tool. The tool comprises a magnetic assembly using one or more permanent magnets and at least one pole piece for extending a magnet pole and shaping the magnetic field to simulate a magnetic monopole in a sensitive volume within the formation. Different embodiments of a segmented antenna enable directional NMR logging. The tool embodiments and methods of their use are suitable for wireline or LWD logging, and can be used for directional drilling.

[0001] This application claims priority of U.S. Provisional Patent Application No. 60/467,568 filed on May 2, 2003 and U.S. Provisional Patent Application No. 60/508,778 filed Oct. 4, 2003, which are incorporated herein by reference.

☐ 14. Document ID: US 4652824 A Relevance Rank: 49

L6: Entry 24 of 26 File: USPT Mar 24, 1987

US-PAT-NO: 4652824
DOCUMENT-IDENTIFIER: US 4652824 A

TITLE: System for generating images and spacially resolved spectra of an examination subject with nuclear magnetic resonance

DATE-ISSUED: March 24, 1987

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Oppelt; Arnulf	Erlangen			DE

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Siemens Aktiengesellschaft	Berlin and Munich			DE	03

APPL-NO: 06/ 586049 [PALM]
DATE FILED: March 5, 1984

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
DE	3310160	March 21, 1983

INT-CL: [04] G01R 33/20, H01F 7/22, F17C 1/00

US-CL-ISSUED: 324/318; 324/319, 335/216, 62/514R
US-CL-CURRENT: 324/318; 324/319, 335/216, 335/299, 505/844, 62/48.3, 62/51.1

FIELD-OF-SEARCH: 324/309, 324/315, 324/318, 324/319, 324/320, 324/322, 335/296, 335/300, 335/301, 335/316, 335/216, 335/299, 62/514R

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
3173079	March 1965	McFee	335/216
3336526	August 1967	Weaver, Jr. et al.	324/319
4291541	September 1981	Kneip, Jr. et al.	62/514R X
4315216	February 1982	Clow	324/309
4442404	April 1984	Bergmann	324/309
4467303	August 1984	Laskaris	335/216
4520315	May 1985	Loeffler	324/309

OTHER PUBLICATIONS

Kaufman et al., Hardware for NMR Imaging, Nuclear Magnetic Resonance Imaging in Medicine, 1981, pp. 53-63.
Conference: Proceedings of the 10th International Conference on Low Temperature Physics Otenaimi, Finland (Aug. 14-20, 1975), pp. 286-288 by J. D. Wilde.
Kaufman, Nuclear Magnetic Resonance Imaging in Medicine, 1981, pp. 53-63.

ART-UNIT: 265

PRIMARY-EXAMINER: Levy; Stewart J.

ASSISTANT-EXAMINER: Oldham; Scott M.

ABSTRACT:

For providing nuclear magnetic resonance equipment with reduced noise generation, gradient coils are disposed in the vacuum of the cryostat which accepts the superconducting magnetic coils for generating the fundamental field. Under given conditions, the radio-frequency transmission and reception coils or antennae are also located in the vacuum.

5 Claims, 4 Drawing figures

☐ 15. Document ID: US 5706810 A Relevance Rank: 46

L6: Entry 17 of 26 File: USPT Jan 13, 1998

US-PAT-NO: 5706810
DOCUMENT-IDENTIFIER: US 5706810 A

TITLE: Magnetic resonance imaging assisted cryosurgery

DATE-ISSUED: January 13, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rubinsky; Boris	Albany	CA		
Gilbert; John	Berkeley	CA		
Wong; San	Emeryville	CA		
Roos; Mark	San Francisco	CA		
Pease; Grant	Oakland	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
The Regents of the University of California	Oakland	CA			02

APPL-NO: 08/ 461253 [PALM]
DATE FILED: June 2, 1995

PARENT-CASE:
This is a divisional of application Ser. No. 08/035,455, now U.S. Pat. No. 5,433,717 filed Mar. 23, 1993.

INT-CL: [06] A61 B 5/055

US-CL-ISSUED: 128/653.1; 128/736
US-CL-CURRENT: 600/412; 600/549

FIELD-OF-SEARCH: 128/736, 128/653.1, 324/315, 606/20, 606/21

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
3228400	January 1966	Armao	
3618610	November 1971	Hannant	
3662755	May 1972	Rautenbach et al.	
3674031	July 1972	Weiche	
3800552	April 1974	Sollami et al.	
3807403	April 1974	Stumpf et al.	
3886945	June 1975	Stumpf et al.	

3901241	August 1975	Allen, Jr.	
3942519	March 1976	Shock	
3971383	July 1976	van Gerven et al.	
4206609	June 1980	Durenec	
4207897	June 1980	Lloyd et al.	
4341220	July 1982	Perry	
4345598	August 1982	Zobac et al.	
4528979	July 1985	Marchenko et al.	
4554925	November 1985	Young	
4558279	December 1985	Ackerman et al.	324/315
4583538	April 1986	Onik et al.	
4618978	October 1986	Cosman	
4724389	February 1988	Hyde et al.	
4740751	April 1988	Misic et al.	
4770171	September 1988	Sweren et al.	
4785246	November 1988	Sugimoto	
4831330	May 1989	Takahashi	
4869247	September 1989	Howard, III et al.	
4882541	November 1989	Haragashira	
4890062	December 1989	Haragashira	
4923459	May 1990	Nambu	
4946460	August 1990	Merry et al.	606/24
5046498	September 1991	Fishman	128/653.2
5050607	September 1991	Bradley et al.	128/653.2
5050608	September 1991	Watanabe et al.	
5078713	January 1992	Varney et al.	
5108390	April 1992	Potocky et al.	606/21
5196348	March 1993	Schweighardt et al.	178/653.4
5200345	April 1993	Young	178/653.1
5205289	April 1993	Hardy et al.	128/653.1
5254116	October 1993	Baust et al.	606/21
5281215	January 1994	Milder	606/20
5290266	March 1994	Rohling et al.	128/653.2
5300080	April 1994	Clayman et al.	606/130
5531742	July 1996	Barken	606/21

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0095124	November 1983	EP	
0343858	November 1989	EP	
1249416	August 1986	SU	
9107132	May 1991	WO	

OTHER PUBLICATIONS

Rubinsky, et al., "Monitoring Cryosurgery . . . ", Cryobiology, vol. 30, pp. 191-

199, Apr. 1993.
Matsumoto, R., et al., "Monitoring of Laser and Freezing-induced Ablation in the Liver with T1-weighted MR Imaging", Journal of Magnetic Resonance Imaging, vol. 2, p. 555, 1992.
Hurst, G.G. et al., "Intravascular (Catheter) NMR Receiver Probe: Preliminary Design Analysis and Application to Canine Iliofemoral Imaging", Magnetic Resonance in Medicine, vol. 24, p. 343, (1992).
Zemtsov, A., et al., "Magnetic Resonance Imaging of Cutaneous Neoplasms: Clinicopathological Correlation", Journal of Dermatological Surgery and Oncology, vol. 17, p. 416, 1991.
Zemtsov, A., et al., "Magnetic Resonance Imaging of Cutaneous Melanocytic Lesions", Journal of Dermatological Surgery and Oncology, vol. 15, pp. 854, 989.
Isoda, H., "Sequential MRI and CT Monitoring in Cryosurgery-An Experimental Study in Rats", Nippon Acta Radiologica, vol. 49, No. 12, p. 17, Dec. 25, 1989.
Isoda, H., "Sequential MRI and CT Monitoring in Cryosurgery-An Experimental Study in Polyvinyl Alcohol Gel Phantom", Nippon Acta Radiologica, vol. 49, No. 12, p. 6, Dec. 25, 1989.
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Bottomley et al., "A review of H NMR, relaxation in pathology; are T1 and T2 diagnostic?" Mechanical Physics, vol. 14, p. 1, 1987.
Mulkern et al., "Contrast Manipulation and Artifact Assessment of 3D and 4D RARE sequence," Magnetic Resonance in Medicine vol. 8, p. 557, 1990.
Vinning E. et al, "Magnetic Resonance Imaging of the Thalamus following Cryothalamotomy for Parkimson's Disease and Dystonia", Journal of Neuroimaging, vol. 1, No. 3, p. 146, Aug. 1991.

ART-UNIT: 335

PRIMARY-EXAMINER: Kamm; William E.

ASSISTANT-EXAMINER: Evanisko; George R.

ATTY-AGENT-FIRM: Fish & Richardson P.C.

ABSTRACT:

Methods and apparatus for magnetic resonance imaging (MRI) assisted cryosurgery. Optimal probe placements and cooling parameters are calculated prior to cryosurgery using MRI data. A MRI compatible cryoprobe and a stereotactic probe positioning device are provided. The resolution of MR images is enhanced by mounting a radio frequency MR coil on the intracorporeal end of a cryoprobe. During cryosurgery the temperature distribution in the frozen region is solved by determining the boundary

of the frozen region and solving the heat equation for the known boundary conditions. During cryosurgery the temperature distribution in the unfrozen region is determined by T1 measurements. The process of freezing is controlled using information from the solution of the energy equation in the frozen region and temperature measurements in the unfrozen region. After cryosurgery the extent of the tissue damage may be ascertained using phosphorus-31 and/or sodium-23 spectroscopy with a special coil set on the cryosurgical probe..

14 Claims, 49 Drawing figures

☐ 16. Document ID: US 5433717 A Relevance Rank: 46

L6: Entry 19 of 26 File: USPT Jul 18, 1995

US-PAT-NO: 5433717
DOCUMENT-IDENTIFIER: US 5433717 A

TITLE: Magnetic resonance imaging assisted cryosurgery

DATE-ISSUED: July 18, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rubinsky; Boris	Albany	CA		
Gilbert; John	Berkeley	CA		
Wong; Sam	Emeryville	CA		
Roos; Mark	San Francisco	CA		
Pease; Grant	Oakland	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
The Regents of the University of California	Oakland	CA			02

APPL-NO: 08/ 035455 [PALM]
DATE FILED: March 23, 1993

INT-CL: [06] A61 B 17/36

US-CL-ISSUED: 606/20; 128/653.5
US-CL-CURRENT: 606/20; 600/411, 600/412

FIELD-OF-SEARCH: 606/20-26, 128/653.2, 128/653.5

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
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4207897	June 1980	Lloyd et al.	
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4528979	July 1985	Marchenko et al.	
4554925	November 1985	Young	
4583538	April 1986	Onik et al.	
4618978	October 1986	Cosman	
4724389	February 1988	Hyde et al.	
4740751	April 1988	Misic et al.	
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4785246	November 1988	Sugimoto	
4831330	May 1989	Takahashi	
4869247	September 1989	Howard, III et al.	
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4890062	December 1989	Haragashira	
4923459	May 1990	Nambu	
5046498	September 1991	Fishman	128/653.2
5050607	September 1991	Bradley et al.	128/653.2
5050608	September 1991	Watanabe et al.	
5078713	January 1992	Varney et al.	
5290266	March 1994	Rohling et al.	128/653.2

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vol. 1, No. 3, p. 146, Aug. 1991.
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Hurst, G. G. et al., "Intravascular (Catheter) NMR Receiver Probe: Preliminary Design Analysis and Application to Canine Iliofemoral Imaging", Magnetic Resonance in Medicine, vol. 24, p. 343, (1992).
Zemtsov, A., et al., "Magnetic Resonance Imaging of Cutaneous Neoplasms: Clinicopathological Correlation", Journal of Dermatological Surgery and Oncology, vol. 17, p. 416, 1991.
Zemtsov, A., et al., "Magnetic Resonance Imaging of Cutaneous Melanocytic Lesions", Journal of Dermatological Surgery and Oncology, vol. 15, pp. 854, 989.
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Rubinsky, B. et al., "A mathematical model for the freezing process in biological tissue", Proc. R. Soc. Lond. B vol. 234, p. 343, 1988.
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Rubinsky, B. et al., Heat Transfer During Freezing of Biological Materials, In: Tien ed. 1989, Hemisphere Publishing Corp. New York.
Keanini, R., et al., "Simulation and Optimization of Three-Dimensional Multi-Probe Prostatic Cryosurgery", J. Heat Transfer-ASME Trans., vol. 114, p. 796, 1992.
Onik, G., et al., "Ultrasound Guided Hepatic Cryosurgery in the Treatment of Metastic Colon Carcinoma; Preliminary Results", Cancer, vol. 67, p. 901, 1991.
Onik, G., et al., "Percutaneous Transperineal Prostate Cryosurgery Using Transrectal Ultrasound Guidance: Animal Model" Urology vol. 37, p. 277, 1991.
Dickinson, R. J., et al., "Measurement of Changes in Tissue Temperature using MR Imaging," Journal of Computer Assisted Tomography, vol. 10, p. 468, 1986.
Le Bihan, D., et al., "Temperature Mapping with MR imaging of Molecular Diffusion: Application to Hyperthermia," Radiology, vol. 171, p. 853, 1989.
Gilbert, J. C., et al., "Solid-Liquid Interface Monitoring with Ultrasound During Cryosurgery," ASME Paper #85-WA/HT-83, 1985.
Bottomley et al., "A review of .sup.1 H NMR relaxation in pathology; are T.sub.1 and T.sub.2 diagnostic?" Mechanical Physics, vol. 14, p. 1, 1987.
Mulkern et al., "Contrast Manipulation and Artifact Assessment of 3D and 4D RARE sequence," Magnetic Resonance in Medicine vol. 8, p. 557, 1990.

ART-UNIT: 339

PRIMARY-EXAMINER: Aschenbrenner; Peter A.

ASSISTANT-EXAMINER: Peffley; Michael

ATTY-AGENT-FIRM: Egan, III; William J. Fish & Richardson

ABSTRACT:

Methods and apparatus for magnetic resonance imaging (MRI) assisted cryosurgery. Optimal probe placements and cooling parameters are calculated prior to cryosurgery using MRI data. A MRI compatible cryoprobe and a stereotactic probe positioning device are provided. The resolution of MR images is enhanced by mounting a radio frequency MR coil on the intracorporeal end of a cryoprobe. During cryosurgery the temperature distribution in the frozen region is solved by determining the boundary of the frozen region and solving the heat equation for the known boundary

conditions. During cryosurgery the temperature distribution in the unfrozen region is determined by T1 measurements. The process of freezing is controled using information from the solution of the energy equation in the frozen region and temperature measurements in the unfrozen region. After cryosurgery the extent of the tissue damage may be ascertained using phosphorus-31 and/or sodium-23 spectroscopy with a special coil set on the cryosurgical probe.

9 Claims, 48 Drawing figures

☐ 17. Document ID: US 20020133148 A1 Relevance Rank: 44

L6: Entry 12 of 26 File: PGPB Sep 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020133148
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020133148 A1

TITLE: Bone-treatment instrument and method

PUBLICATION-DATE: September 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Daniel, Steven A.	Fremont	CA	US	
Balbierz, Daniel J.	Redwood City	CA	US	
Russell, Robert D.	Isle of Palms	SC	US	
Pearson, Robert	San Jose	CA	US	
Tamayo, Andres	Stanford	CA	US	
Jimbo, Takehito	San Bruno	CA	US	
Frischmeyer, Karen	Palo Alto	CA	US	

APPL-NO: 10/ 044081 [PALM]
DATE FILED: January 11, 2002

RELATED-US-APPL-DATA:
Application is a non-provisional-of-provisional application 60/261297, filed January 11, 2001,

INT-CL: [07] A61 B 18/04

US-CL-PUBLISHED: 606/34
US-CL-CURRENT: 606/34

REPRESENTATIVE-FIGURES: 1B

ABSTRACT:

Ablation devices and associated methods are provided for use in palliative